

Fuel Cells May Be the Answer When the Fossils Are Gone

When fuel from the earth's very last fossil is pumped from the ground and consumed—what then? How do we generate heat and light?

That's not a new question, of course. Two possible answers are wind

and solar power (photovoltaics)—and experiments on both of those options have been underway here at the University for some time.

A third option, fuel cells, is now gaining popularity or, as Prof. Ziyad Salameh, chair of the Electrical and Computer Engineering Department, says, "It's the hot topic of research everywhere."

One of those places is Ball 310, where fuel cells—two nondescript black metal boxes sitting on shelves beside a tank of hydrogen gas—power a rack of two dozen 24-volt batteries.

The hydrogen is piped into the fuel cells where it combines with oxygen from the atmosphere and passes through a catalyst that produces water and electricity. The water drains off into a sink, and

the electricity flows through a DC controller from whence it charges the batteries.

An important safety feature of this arrangement is a duct system that draws stray hydrogen through an explosion-proof blower on the roof of Ball.

"Sooner or later," says Salameh, "fossil fuel will be depleted. Fuel cells are one source being considered for the future generation of electricity. We hope that when the cells become affordable enough—maybe in 10 years or so—they will be used to generate electricity in homes, using natural gas."

"Each house will be autonomous, generating its own power. There will be no need for overhead lines or to pay anyone to manage the distribution of electricity. Fuel cells will be a clean, noiseless source of energy."

If a home is not served by natural gas, Salameh says, the occupants can buy cylinders of hydrogen, which are readily available.

—JMcD



▲ Panhathai Buasri, a doctoral candidate in electrical engineering, opens a hydrogen tank valve that allows the gas to flow into fuel cells, where it will combine with oxygen to generate electricity. Prof. Ziyad Salameh says fuel cells are a "clean, noiseless source of energy."

Doctorate in Physical Therapy, Master's and Doctorate in Biomedical Engineering and Biotechnology Approved

At the April meeting of the Board of Higher Education (BHE), two new graduate degrees were approved for the Lowell campus. The College of Health Professions will now offer a doctorate in physical therapy. Lowell will jointly offer a master of science and Ph.D. program in biomedical engineering and biotechnology with the Boston, Dartmouth and Worcester campuses.

Beginning in the fall of 2002, the Department of Physical Therapy will enroll students in a Doctor of Physical Therapy (DPT) program. The DPT curriculum prepares individuals for entry into the profession of physical therapy. The fully-accredited, post-baccalaureate program requires a

three-year full-time commitment, including part of each summer and a total of 35 weeks of clinical experience.

"This is consistent with the direction of the American Physical Therapy Association, which is phasing out baccalaureate programs in PT," says Dr. Janice M. Stecchi, dean of the College of Health Professions. "Practitioners are more often involved in an autonomous practice, where they can diagnose and treat patients within their own discipline. They are in a position to refer patients and get referrals, rather than simply responding to doctors' diagnoses."

Practitioners in the field are also able to receive third party reimbursement, or insurance coverage, which

makes the additional clinical experience more critical.

"The DPT is a clinical degree," points out Dr. Susan O'Sullivan, newly elected chair of the Physical Therapy Dept. "It requires 35 weeks of clinical experience in a variety of practice settings and patient populations."

Lowell's master's degree in physical therapy is being phased out. Most of the current students have opted to transition into the doctoral program. The college will honor its commitment to those masters' candidates who choose to pursue only their master's.

The multi-campus, inter-disciplinary master of science and doctoral program in biomedical engineering

Separate Funding Keeps Capital Projects on Track

Capital funding is keeping construction projects around campus moving forward, in spite of the tight operational budgets throughout the UMass system.

"In 1995, the state bonded money for capital projects on the UMass campuses," explains Diana Prideaux-Brune, special assistant for Economic Development. "This capital money is completely separate from the state budget." The state regularly issues bonds (roughly the equivalent of taking out a loan) to cover the cost of maintenance and upgrades for state-owned facilities. State law prohibits spending capital money for operating expenses.

Safety, accessibility and increased efficiency are goals of the projects now underway across the Lowell campus. "With the student business offices moving into Dugan Hall, our number one priority on South is to make that building accessible," says Prideaux-Brune. Plans also call for increased lighting along Broadway, three new emergency call boxes, a more visible pedestrian crosswalk, and a bus stop that enables buses to pull out of traffic when stopped. "All of the new landscaping across campus has low maintenance plantings and irrigation systems," she adds.

On North campus, planned construction includes upgraded fire alarms in Olsen, new chillers in Pinanski, and repairs to the terrace of Alumni Hall. Lydon Library will have handicap bathrooms and elevators upgraded.

"We have some of the 1995 bond money left in our account," says Prideaux-Brune, "and we are hoping that next year we can repair some roofs, upgrade the power capacity of some buildings, and continue replacing underground steam lines on North."

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Take Note

Women's Week Shoe Exhibit Extended Through Sept. 11

For those who created the more than 500 shoes for the Lowell Women's Week public art show, "Stepping Into an Uncertain World," many of the shoes symbolize hope, freedom and independence. The exhibit, comprised of decorated shoes from sneakers to pumps to boots, has been extended due to its popularity through September 11 at the Boott Cotton Mill Museum. While most of the artists are from the Merrimack Valley, shoes arrived from as far away as Florida. A photo of shoes taken on September 11 in New York City inspired the exhibit, which is dedicated to the survivors and in memory of those women who were unable to escape the tragedy.

The Boott Gallery is located at 400 Foot of John St. in Lowell. For more information about "Stepping into an Uncertain World" or gallery hours, call the Lowell National Historical Park at (978) 970-5000.

Environmentally Friendly Solutions Offered at Sustainable Technologies Symposium

The University Research in Sustainable Technologies Symposium will be held on Monday, May 20 at 9:30 a.m. in the Wannalancit MIL

Conference Room. Researchers from UMass Lowell and UMass Dartmouth will present recommendations resulting from \$80,000 in grant money to investigate more environmentally friendly technologies in different industries. Five projects were funded, including the following from the Lowell campus: Prof. John Duffy, Mechanical Engineering, Solar Electrolyzer Fuel Cell, 3KW System; Asst. Prof. Anastasios Angelopoulos and Prof. Kenneth Marx, Chemistry, Insulating Coatings for Electronics; Prof. Sammy Shina, Mechanical Engineering, Performance Analysis of Lead-Free Printed Wiring Boards; and Prof. Stephen McCarthy, Plastics Engineering, Innovative Materials for Wire and Cable Coating.

A joint project of the Toxics Use Reduction Institute (TURI) and the Center for Environmentally Appropriate Materials (CEAM) with support from the Commonwealth's Strategic Envirotechnology Partnership (STEP) program, the University Research in Sustainable Technologies program taps the research capabilities of the UMass System to advance the investigation, development and evaluation of sustainable technologies that are environmentally, occupationally and economically sound.

Concert Band Tunes Up For 10th Season

The Lowell Summer Concert Band will celebrate its 10th anniversary at Boarding House Park in Lowell. Under the direction of Music Prof. David Martins, the band is sponsored by UMass Lowell for the Lowell Summer Music Series.

This year, the LSCB will give three evening performances that will include styles as varied as classic Broadway show tunes and the music from "The Gladiator." For the first time, the band will also perform as part of the children's series, featuring music from other well-known movies like "Lord of the Rings," "Harry Potter and the Sorcerer's Stone" and "Peter and the Wolf."

"It still feels new," says Martin. "We feel that the band demonstrates the best in amateur playing."

When the band started in 1993, Martins had no idea it would still be going strong a decade later. Oliver Chamberlain, then-director of the UMass Lowell Center for the Arts, approached Martins about assembling a "Souza-style" concert band. While Martins was excited by the idea, it took a while to conceive of how it would be done.

Now, close to 70 amateur musicians, including students, UML alums and many people from non-musical professions, perform with what has become a Lowell institution. Many band members have been with the band since its inception. In addition to performances at Boarding House Park, the band also performs a special Fourth of July Pops-style concert accompanied by fireworks on the shores of the Merrimack River.

Over the years, LSCB has been joined by numerous soloists such as the late Nat Paolla, former UMass Lowell Prof. and trumpeter with the Boston Pops, and vocalist Jean Danton, also of the Boston Pops.

"The quality of the band's musicianship is excellent," says Asst. Superintendent of the Lowell National Historical Park Peter Aucella, who oversees the Boarding House Park series.



▲ Prof. and Conductor David Martins, right, of the Music Department prepares with Asst. Conductor Blair Bettencourt before a performance by the Lowell Summer Concert Band. The band will celebrate its 10th season of performing in the Lowell Summer Music Series this year.

Martins says that he and Assistant Conductor Blair Bettencourt begin selecting the music in late fall for the next summer. They have to consider musical difficulty, potential soloists and themes that the series' audience will find appealing.

"We'll have scores of pieces strewn about my office and we just study them," Martins explains.

"The challenge of putting each show together on two rehearsals in two weeks is incredibly daunting," he continues. "The musicians enjoy the challenge of the time crunch. They set high standards for themselves. That's what sets this ensemble apart from other amateur groups."

The summer schedule is especially tricky for Martins, who also spends six weeks as the Director of Wind Activities for the Young Artists Program at Tanglewood. As a result, he commutes back and forth for concert band rehearsals. Bettencourt, who also works as the Director of Instrumental Music in Westford, coordinates activities while Martins is out of town.

"It says something about how much I enjoy the summer concert band," Martins says about his summer sojourning. "It's an experience with a whole different group of people that I really enjoy."

For information about the entire Lowell Summer Music Series, log onto www.lowellsummermusic.org.



Women's Basketball Team and Students Get 'Rowdy'

▲ April vacation gave area kids a chance to attend Rowdy's All Sports Adventure Week, run by members of the Women's Basketball Team. Back row from left are team members Gina Morton, Meghan Hamilton, Enjoli Edwards and Erica Gunn. The program, which ran from April 16-19, included activities like playing baseball at LeLacheur Park, home of the Lowell Spinners.

Cyber Lab Makes It Possible to Conduct 'Hands-off' Experiments

Working "a little here and a little there" over the last year or so, Glen Bousquet has developed a system by which mechanical engineering students can conduct laboratory experiments via the Web.

The arrangement eventually will enable students to view or conduct about half a dozen experiments. But, for now, the "beta" version concerns itself only with the thermodynamic efficiency of a pump.

The pump in question sits on a bench at the back of the lab in Ball 118, attached to the requisite number of cables and wires connecting it to a video camera, a computer and a monitor. The camera records the pump's movements and transmits them to the computer so that the experiment can be viewed and controlled remotely.

The design still has a few bugs to be ironed out, says Systems Analyst Bousquet, and students are now trying it out to see how it works and how well they like it.

The way it works is that a student using a computer at any remote location can connect with the computer in

the laboratory and conduct the experiment him or herself, or watch while it is conducted by someone else. Any number can view the process, but only one person at a time can actually carry out the experiment.

Bousquet says the faculty has shown an interest in the project and the feedback, in general, has been positive.

Prof. John McKeligit, chair of the Mechanical Engineering Department, says Bousquet's project is a "very worthwhile effort that we support. Laboratory space and equipment are at a premium and this will make it possible for more students to access the facilities."

Bousquet himself says, "The recent advances in software and hardware have made it possible for us to do this—so why not do it?"

The project, which he calls a Cyber Lab, will enable students to

conduct an experiment before or after it is discussed in class, giving them a greater insight into the findings. In some cases, Bousquet says, the instructor might access the experiment in the classroom, project it onto a screen, and conduct it in real time to demonstrate the procedure.

—JMcD



▲ Systems Analyst Glen Bousquet demonstrates his new system by which students can view or conduct lab experiments via the Web. The monitor displays an image of the pump on which an experiment for thermodynamic efficiency is conducted.

CSCE Launches Fourth Online Graduate Program

The Division of Continuing Studies and Corporate Education's latest online graduate certificate program is Foundations of Business, a program that will help professionals without an undergraduate degree in business to transition into a master's in business administration program.

"The University's online offerings have been growing exponentially to accommodate the need of professionals to have high-quality, convenient education," says Dean Jacqueline Moloney of CSCE. "The Foundations of Business graduate certificate will tap into another student market."

The 12-credit certificate consists of six core courses: "Financial Accounting," "Business Financial Analysis," "Marketing Fundamentals," "Operations Fundamentals," "Organizational Behavior," and "Global Enterprise and Competition." Completed coursework can be applied directly to the MBA degree. Several UMass Lowell MBA courses are already available online in addition to the core courses.

"The economy has rejuvenated interest in MBA programs," according to Dean Kathryn Verreault, College of Management. "This certificate program is ideally suited for working professionals who are trying to balance work and family commitments."

The Foundations in Business certificate is the fourth online graduate program at UMass Lowell, including a master's degree in educational administration and certificates in clinical pathology, and photonics and optoelectronics.

Research Dinner Sparked Lively Discussion

What are the rewards of collaborative research?

What are the barriers to collaboration?

And what can be done to overcome the barriers?

These three questions were posed by Prof. John Duffy, of mechanical engineering, as part of a presentation during the second annual Research Dinner, sponsored by the Committee of Federated Centers and Institutes (CFCI).



▲ Cheryl West, left, community consultant for the Center for Family, Work and Community, talks with Asst. Prof. Craig Slatin, of Health and Clinical Sciences. Slatin is also co-director of the Center for Public Health Research and Health Promotion that currently is engaged in a federally funded study of health disparities among healthcare workers.

Two teams of researchers, who have been working across disciplines, discussed their research and the particular challenges of collaboration.

Duffy had collaborated with

Cheryl West, community consultant for the Center for Family, Work and Community, on Project SPLASH, an innovative program of urban aquaculture and science education funded by the National Science Foundation.

Profs. Kenneth Marx, chemistry, and Susan Braunschut, biological sciences, discussed their creation of a unique biosensor device with applications in drug discovery and cancer treatment research.

CFCI Co-directors Judith Boccia and Kenneth Geiser introduced the speakers and welcomed the participants.

"The CFCI supports collaboration," said Boccia. "The centers and institutes are themselves interdisciplinary and we encourage faculty, who may be new to the University or unfamiliar with some of the research activities, to think about research

collaborations with CFCI members."

About 50 faculty, staff and graduate students attended the dinner, representing a broad cross section of departments and research activity.



▲ Peter O'Connell, left, director of the Tsongas Industrial History Center, talks with Louis Petrovic, director of external funding, technology transfer and partnering, Research Foundation, at the annual research dinner sponsored by the Committee of Federated Centers and Institutes, CFCI. The Tsongas Center is a joint project with the Lowell National Park and the UMass Lowell Graduate School of Education that provides hands-on learning about industrial history to 40,000 students a year.

Youth Summer Camp Listings Online

Looking for something for your kids to do this summer? UMass Lowell offers a wide range of educational, athletic and recreational summer camp opportunities for children and teenagers in the region. From Band Camp to Design Camp to eight different athletic camps, there's something for every interest. For information, log onto www.uml.edu/summercamps or call (978) 934-3224.

Community Planners Picture Lowell in 2022

On April 9, nearly 100 people from the city and University came together for the first of two planning workshops intended to shape a vision of Lowell 20 years from now. The participants were asked to express a vision that represents the best choices and policies for sustaining a high quality of life based on the efficient use and reuse of resources. Of particular interest was seeing how the social and political effects of decisions about technology use can be taken into account in community planning. The project is

coordinated by the Center for Family, Work, and Community and Center for Industrial Competitiveness of the University and the Loka Institute. The workshop is based on a European model wherein participants read narratives depicting alternatives for life in 2022 and then respond with their own ideas. This is the first time an American community has employed the approach. The National Science Foundation and Massachusetts Foundation for the Humanities are funding the project. (Photos courtesy of Margarita Zapata-Turcotte)



▲ Cheang Ngor of First Pro Enterprises, center, emphasizes a point in a working group with other business representatives.



▲ CFWC Co-director Dr. Linda Silka facilitated a discussion with the nearly 100 participants to help prepare for the day's task.



▲ Lowell City Councilor and Vice Mayor Armand P. Mercier, left, offers opening remarks for the Scenario Workshop. CFWC staff member Dave Turcotte, right, played a key role on the project management team.



▲ Maria Lopez of the Merrimack Valley Housing Partnership.

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Doctorate in Physical Therapy, Master's and Doctorate in Biomedical Engineering and Biotechnology Approved

and biotechnology was also approved by the BHE this spring. The program will enroll its first class in January 2003.

The idea for developing a multi-campus biomedical engineering and biotechnology doctorate originated at a research meeting of faculty from the Lowell and Worcester campuses held at the Research Foundation in 1999. Dr. Jerome L. Hojnacki, dean of the Graduate School and principle author of the program proposal, noted wide support for the program throughout the system. Contributors from the Lowell campus included Dr. Kay Doyle, Health and Clinical Sciences; James Magarian, Graduate School; Dr. Michael Fiddy, Electrical and Computer Engineering; Dr. James Egan, Physics; Dr. Susan Brauhn, Biology; Dr. Julie Chen, Mechanical Engineering; Drs. Ken Levasseur and Charlie Byrne, Mathematics; Dr. Eugene Mellican, Philosophy; and Dr. Bryan Buchholz, Work Environment.

Buchholz was recently named the system-wide director of the program and will serve as the overall coordinator for its implementation. "This program is creating some exciting opportunities for faculty and graduate students," he says. "Involving faculty from four campuses dramatically increases the possibilities for interaction and collaborative research."

"Dr. Sukant Tripathy of Chemistry and Dr. Randy Swartz of Chemical Engineering made particularly significant contributions to the development of the program at key points during its genesis. Neither lived to see this program approved, but their special contributions will be respectfully honored by research assistantships awarded in their memory to outstanding graduate students," says Hojnacki.

In the summer of 2000, Hojnacki received a \$50,000 grant from the UMass President's Office to develop the background material required to submit the proposal. The grant also resulted in the publication of the first system-wide Biomedical Research Compendium listing the research expertise of faculty from all five UMass campuses. It was prepared by Hojnacki, Doyle and Magarian.

The doctorate is designed to bring together the allied disciplines of biomedical engineering and biotechnology and will be open to a wide range of baccalaureate degree recipients with engineering, physical science, life and clinical sciences, and related backgrounds. The program



▲ Key faculty in the two graduate programs approved this spring by the Board of Higher Education are, seated, from left, Dr. Janice M. Stecchi, dean of the College of Health Professions, and Dr. Susan O'Sullivan, newly-elected chair of Physical Therapy, and standing, from left, Dr. Joseph Dorsey, out-going chair of Physical Therapy, Dr. Jerome L. Hojnacki, Dean of the Graduate School; Dr. Bryan Buchholz, Assoc. Prof. of Work Environment and first director of the graduate program in Biomedical Engineering and Biotechnology.

will emphasize a multidisciplinary, team approach in course presentations, laboratory rotations, and joint research projects prior to dissertation specialization. Partnerships with biomedical industries will be encouraged to enhance collaborative research opportunities with faculty and to develop graduate internships for doctoral candidates.

Courses will be offered through faculty exchanges among sister campuses and through several different distance-learning venues including full motion, two-way interactive video and cybered format, increasing access to courses for students on the four campuses. The program will encourage joint mentoring of doctoral student research by faculty among the UMass campuses so as to broaden the research opportunities available to students.

Hojnacki noted enthusiasm for the program among potential students and industry representatives. "Surveys of UMass undergraduate and graduate students in departments appropriate for the degree indicated strong interest in the program," he says. "Industry representatives have also provided encouraging letters of support for the program particularly as it relates to the workforce needs of the more than 600 biomedical companies in Massachusetts."

—EJ

Center for Work, Family and Community Prepares Report on Lowell Electoral Process

A study, partly prepared by the Center for Work, Family and Community, is providing the City of Lowell with the data it needs to evaluate its voting system.

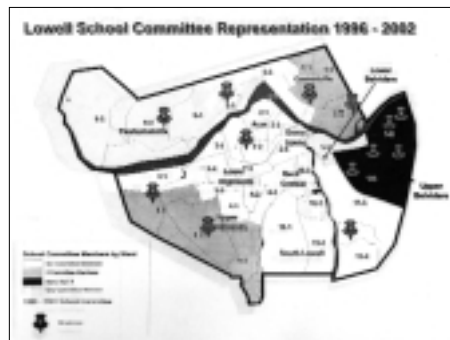
Dan Toomey, project manager at the Center, and George Pillsbury, policy director for the Massachusetts Voter Education Network, collaborated on "Representing Lowell: The Problems of Winner-Take-All Voting in Lowell's At-Large Elections for School Committee and City Council." The center provided the data for the report, which was commissioned by the Voter Education Network and supported by the Theodore Edson Parker Foundation.

The report, which analyzes Lowell local election results from 1995 to 2001, recommends that the current system whereby school committee members and city councilors are elected by all voters city-wide be changed to one that includes district representation or a different at-large voting process. That would enable more equitable representation by all populations, including minorities and persons of lower incomes, the study concludes.

"The voting method is known to produce skewed or unrepresentative results because it allows 51 percent of the voters to determine the outcome for a majority of the seats, while leaving the other half with little direct representation," the study states.

The study determined that since Lowell adopted its at-large system in 1957, no racial minority has won a school committee seat, even though 52 percent of Lowell's public school students are Hispanic or Asian. Similarly, most city councilors come from three higher-income neighborhoods and only one minority has been elected, despite minorities comprising over one-third of the city's population.

The report also notes that city-wide campaigns are increasingly expensive, making it difficult for first-time candi-



dates to get elected, and neighborhoods with fewer voters because of age and citizenship field fewer candidates and have a lower percentage of voters who turn out on election day as they lose faith in the system.

"The challenge is to have government represent all people. The system clearly does have an impact on who gets elected and where they're from," Toomey says. "It's really hard for someone to raise a lot of money if the perception is that you have no chance to win."

The study recommends that the city establish a Charter Commission comprised of representatives of all neighborhoods to study alternatives to the current voting system, with its recommendations to be voted on by public referendum. Copies of the report have been sent to Lowell city officials and community groups, some of which are planning public forums and meetings to discuss its findings.

But, Toomey notes, a study is only the first step in an evaluation of any system and it is up to the community to determine if it wants to make any changes.

"Our role as the University is simply to put together a report using statistical data and allow community groups to look at it and have a dialogue about it," Toomey says. "If there isn't somebody to carry the ball, it becomes just another academic study that hits the paper for a week then dies."



▲ Before the awards ceremony closing Enviro-Camp, a three-day program of environmental learning and activities run by the Center for Family, Work and Community, Camp Director Khan Chao, center, is joined by assistants Robin Tanguay, left, and Sokley Oeur.

Enviro-Camp Kids Give Campus a Lively Atmosphere

Roaming bands of inquisitive youngsters surprised a few in the campus community recently, as teams of Enviro-Camp participants asked college students about their majors, interviewed professors about their work and counted the steps up to the front doors of Cumnock Hall.

Enviro-Camp is a three-day program of active learning run by the Center for Family, Work and Community during April school vacation week and directed by Khan Chao, community outreach worker for the Center.

The Lowell students who came to Enviro-Camp, now in its third year, were drawn from two other Center-directed programs: GearUp, a long-term program with a cohort of students now in sixth grade at the Robinson School, that encourages advanced education; and the River Ambassadors Program, RAP, also directed by Chao, that engages Southeast Asian high school students in environmental learning and outreach.

Matching up sixth-grade and high school campers motivates the younger students and teaches the

older ones to become mentors, explains Chao.

The theme of Enviro-Camp was Your Environment, Your Home. Participants heard about housing and the environment from guest speakers Linda Silka, co-director of the Center, and Phuong Phan of the Lowell Community Health Center. They attended workshops about asthma, lead poisoning and water quality testing. They built model homes and created environmental skits.

"What they enjoyed most, especially the sixth-graders, was the Passport Adventure," says Chao. "They had to visit professors and learn about what they do, find college students with a specific major and track down details of the campus."

The participating faculty and staff included Gunther Kegel, Physics; Fred Youngs, Work Environment; Cathy Crumbley, Lowell Center for Sustainable Production; Arnold O'Brien, Environmental, Earth and Atmospheric Sciences; and Julie Villareal, Center for Family, Work and Community. Tours of the weather lab and the reactor building rounded out the campus experience.

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Separate Funding Keeps Capital Projects on Track

She hopes that future bonding money may include money for two parking garages on campus.

"We are lucky to have capital money to spend on these items," says Prideaux-Brune, "because they are mandatory to meet code regulations and to stay functional. If we didn't have capital money, funding for them would have to come from our campus operating budget."

—EJ



▲ Current construction includes reconfiguring the front of Dugan Hall to improve access.

Faculty Showcase New Technologies



▲ At the Technology Fair April 24, faculty members like Math Prof. Kenneth LeVasseur, left, screening the web-based Mathematica program, demonstrated various technologies they use in their classes. His audience for this demonstration are, from left, Michael Lucas of the Graduate School of Education, Sheila Riley-Callahan of the Centers for Learning, and Physics Prof. Arthur Mittler. The fair was organized by Lucas, Riley-Callahan, and Physics Prof. Aram Karakashian for the Council on Teaching, Learning, and Research as Scholarship.

'Gathering at the Well' Shows Women Changing Our World

The title of the recent "Gathering at the Well" Forum, held April 11 in Alumni Hall, is rooted in metaphor. In the early lives of women, the well was traditionally the place where work was done. But a deep running well sustained life and also served as a meeting place where support networks were cultivated and a sense of community was built.

Sponsored by the UMass Lowell Council on Diversity and Pluralism and the Center for Women and Work, the "Gathering at the Well" was established in 1998 as such a meeting place. The event focused on women's impact on the world. Keynote speakers Dorothy Burladge, Ph.D., a clinical psychologist, and Sue Thrasher, Ph.D. with the Five College Public School Partnership, addressed an

audience of nearly one hundred and talked of growing up in the segregated South and their experiences with the Freedom Movement.

During her talk, an emotional Burladge spoke of her decision to join the Freedom Movement, which alienated her from family and friends. "As you walk toward the future," she said, "you are often forced to leave people behind." Burladge and Thrasher also showed the audience a string of haunting vignettes that portrayed the everyday struggle of blacks under the weight of Jim Crow Laws in the racially divided South.

The forum culminated with a special multi-media presentation about the Revolutionary Association of the Women of Afghanistan (RAWA) by Anne Brodsky, Ph.D.

and Alicia Lucksted, Ph.D., both from the University of Maryland. RAWA runs schools, orphanages and work projects for the refugees of Afghanistan. Brodsky and Luckstead relayed their experiences, sharing stories and photos about the efforts of RAWA in Pakistan. Brodsky, who recently returned from Pakistan, talked of her visits to Afghan camps and urban centers where she met and spoke with hundreds of refugees. Lucksted is one of the founders and coordinators of the U.S. Supporters Network, a national grassroots network that assists RAWA's efforts.



▲ Dorothy Burladge, Ph.D., left, Joyce Gibson, co-director of the Center for Family, Work and Community, and Sue Thrasher, Ph.D., right, each participated in the Fourth Annual "Gathering at the Well" Forum at Alumni Hall, where the focus was 'Women Changing the World.'

Girls Get WISE About Science and Engineering Careers

The UMass Lowell Women in Science and Engineering program (WISE) brought more than 400 girls from the seventh and eighth grades to campus for a career day, WISE 2002. Each girl attended three workshops from a selection of 26, presented by working professional women in science, engineering, and technical fields. Prof. Ruth Tanner of the Chemistry Department directs the program, now in its seventh year.

The girls attending the workshops focused intently as they practiced crime-lab techniques, medical illustration, weather forecasting, veterinary procedures, electrospinning of fibers, and many more hands-on activities that related to the daily work of the presenters.

During the workshops, the presenters also served as role models to the girls, offering advice about high school courses, describing their own career choices, and answering questions about their work and lives. They encouraged the girls to contact them by e-mail.

The WISE 2002 keynote speaker was Jackie Richter-Menge, a polar researcher with the U.S. Army Corps of Engineers' Cold Regions Research and Engineering Laboratory in Hanover, N.H., who has participated in many expeditions to study the Arctic sea ice pack. She gave a lively overview of a yearlong research project based on an icebreaker that was deliberately frozen into the pack ice. The researchers studied drift of the pack ice and conditions in the atmosphere above and ocean below their, while coping with shifting ice, patches of open water and curious polar bears.

WISE Career Day included a workshop for participating teachers, directed this year by Prof. Anita

Greenwood of the UMass Lowell Graduate School of Education.

The WISE program funded summer science scholarships for 17 of the participating girls, one for a program at the New England Aquarium and 16 for the DesignCamp at UMass Lowell.

Philips Medical Systems of Andover was the title sponsor for WISE 2002. Philips Medical Systems' products include technologies in general imaging and cardiac ultrasound, X-ray, nuclear medicine, patient monitoring and resuscitation.

Participating students came from Andover, Ayer, Billerica, Chelmsford, Dracut, Groton, Lancaster, Lawrence, Lowell, Maynard, Methuen, North Andover, Pepperell, Reading, Shirley, Stoneham, Tewksbury, Townsend, Tyngsboro, Westford and Wilmington.



▲ Chemistry Prof. Ruth Tanner, right, director of UMass Lowell's Women in Science and Engineering (WISE) program, presents a certificate to keynote speaker Jackie Richter-Menge, a polar researcher with the U.S. Army Corps of Engineers' Cold Regions Research and Engineering Laboratory.



▲ "Don't be afraid of the microscope" is one of the messages in the medical laboratory science workshop, led by Donna Richards and Kathleen Calway, medical technologists with the Lahey Clinic Medical Center. Presenters encourage the girls to keep in touch by email.



▲ WISE participants try their hands at assembling potshards at an archaeological workshop run by Molly McNamara, objects conservator at the Isabella Stewart Gardner Museum. All the workshop presenters are working professional women in the sciences and engineering.



▲ Melissa Bell, meteorologist with WBZ-TV, Channel 4, guides girls from seventh and eighth grades through the intricacies of plotting a weather map. Workshop presenters talk about their own career paths and academic preparation.

UMass Day Celebrated at Chelmsford Library

UMass Day was celebrated at the Chelmsford Public Library on April 27, one of six locations across the state where activities and information focused public attention on the various roles the University and its in-state alumni play across the Commonwealth.

The UMass Lowell event featured activities for all ages, including a mini-design camp at which children made mousetrap cars and candy safes, a faculty member reading to pre-schoolers, a clown, face painting, and "Rowdy," the UMass Lowell hockey team mascot. Representatives of the UMass Extension Service were also on hand to discuss sources for the Latino and Asian vegetables they are planting in the Merrimack Valley.



▲ Among those who helped organize and staff UMass Day at the Chelmsford Public Library were, from left, Donald Rizzo, Executive Director of University Advancement; Gerald Paolilli, past president of the Alumni Relations Council; Joseph Corso; Diane Earl, Director of Alumni Relations; and Carol Heelon. Corso and Heelon are active members of the Alumni Relations Council.

New Lydon Library Greet Students After Spring Break

Lydon Library got a makeover this spring, and the facility that greeted students returning from the break is both better-equipped and more comfortable than the one they left.

Beginning underfoot, with a new layer of carpeting on the first floor, the library took on a new look as fixtures were replaced, seating softened up, and study areas rearranged. Also on the first floor, the reference room has been rearranged as a more open and inviting study space, and new study tables and chairs are on their way. Coming into place around that

is a new lounge area for students, with plusher furniture on order.

And while the décor has softened, the hardware has multiplied: 30 new Dell computers, designated for public use and library instruction, have arrived in the Electronic Reference Center, each with 1.5 Ghz Pentium 4s, and 250Mb Zip drives.

Librarians Marion Muskiewicz, Ellen ML Keane and John Callahan collaborated with Joseph Caulfield, assistant to the Provost, to bring this overhaul through during the break, aided by library staff Donna Beausoleil and Jason Kramer.

Medical Lab Week Recognized in City, on Campus

National Medical Laboratory Week, sponsored by the American Society for Clinical Pathology, took place April 14 to 20. The week is intended to recognize the approximately 265,000 medical laboratory professionals and 15,000 board certified pathologists who perform and interpret medical laboratory tests.

Lab Week was marked in Lowell with a citation from Mayor Rita M. Mercier, given to representatives of the College of Health Professions, including Dean Janice M. Stecchi and Dr. Kathleen Doyle, coordinator of the Medical Technology and Clinical Lab Sciences Programs.

"Laboratory tests affect 80 percent of all medical decision-

making—in diagnosis, prognosis, treatment, and treatment monitoring," says Doyle. "We're facing a shortage of qualified clinicians and that could eventually threaten the reliability of those tests."

Over the next decade, fewer than half the qualified clinicians will be available to fill the number of laboratory positions that become available, according to U.S. Bureau of Labor Statistics data. There are currently 1,200 clinical labs in Massachusetts.

"We have great programs here," says Stecchi, "and it's important to get that word out—important to us and important to the health care industry."



▲ Pamela Jahngen-Provencal, from the College of Engineering, left, gave State Senator Susan Fargo information on the Design Camp when she visited UMass Day.



▲ Chelmsford residents Patrick and Laura Coffey were intrigued with the candy safe, one of the projects they could make at the mini-Design Camp, being demonstrated by Doug Prime, director of Design Camp.

High School Students Explore Engineering

▲ A junior honors class in chemistry from Dracut High School visited labs in all five undergraduate engineering departments recently, part of outreach activities by UMass Lowell's Francis College of Engineering. Here Seth Limanek, senior in chemical engineering, shows students some of the processes in Prof. John Walkinshaw's paper laboratory.



▲ Participants in the Medical Lab Week citation ceremony at Lowell City Hall included, from left, Pamela Waksmonski, administrative director of Laboratory Services at Saints Memorial Hospital; Dr. Janice M. Stecchi, dean of the College of Health Professions; Dr. Kay Doyle, Clinical Laboratory Sciences; City of Lowell Mayor Rita M. Mercier; Sharon Brommer, director of diagnostic services at Lowell General Hospital; Leslie Davis, lab operations manager at Lowell General Hospital; Nancy Karlson, medical laboratory technician at Leahey Clinic; and Priscilla Fawcett, coordinator of client services for laboratories at Saints Memorial Hospital and an adjunct faculty member in Clinical Laboratory Sciences.

Fire Fighting Robots Compete in Blazing Competition

Five student teams from the Computer Science Department competed at the Ninth Annual Trinity College Fire-Fighting Home Robot Contest in Hartford, Conn., held April 20 and 21. The undergraduate students and their robots—Gusher, Jethro, Tornado 120, Hanuman and River Hawk—contended with as many as 62 other teams in their division.

The challenge for the entrants was to build a computerized (not radio-controlled) robotic device that would move through a maze of four rooms on the single floor of a house, detect fire (a lit candle) and then put it out.

Computer Science Assistant Professor Holly Yanko, who specializes in robotics, served as the team's advisor. "This was our first year at Trinity, and the students and their robots did great."

Of the 62 entries, four of the teams ranked in the top 15, earning cash prizes and robot kits. Jethro, a robot with a damp sponge mounted to a mechanical arm, won the award for most innovative—one of only three similar awards in a field that totaled 160 entries.

Contest results and photos are available at www.trincoll.edu/events/robot.



▲ Students pose with their home-built robots at the recent Trinity College Fire-Fighting Robot Contest in Hartford, Conn. Of the 62 entries, four UMass Lowell teams ranked in the top 15. Front row from left are Matt Samperi, Aravinda Liyanage, Phil Thoren and Mike Baker; middle from left are Chris Yiu, Loc Dang, Amal Sen, Frank Fernandes and Ed Giardina; back from left are Nathan Crouse and Rushabh Mehta.

RAWA: Afghan Women Fighting Oppression



▲ As part of a special multi-media presentation at McGauvran Hall, Anne Mulvey, center, of the Center for Diversity and Pluralism, hosted guest speakers Alicia Lucksted, left, and Anne Brodsky, both Ph.D.s from the University of Maryland, who spoke of their involvement with RAWA (Revolutionary Association of the Women of Afghanistan), a humanitarian group that runs schools, orphanages and work projects for Afghan refugees.



A Show of Support

▲ Posters supporting women's activism around the world were displayed at the recent "RAWA: Afghan Women, Oppression and Resistance" event held at McGauvran Student Center. This poster addresses the women of Afghanistan and their struggle for basic freedoms.

"Alice in Wonderland" Ballet Will Mark Finale of Discovery Series

Two performances of the story ballet, "The Alice in Wonderland Follies," the concluding event of the UMass Lowell Discovery Series' 15th season, will take place May 5th at 2 and 4:30 p.m. in Durgin Hall.

The show, an amalgam of acrobatics, ballroom, soft-shoe and burlesque dance styles incorporated into classical ballet, was choreographed by Keith Michael for the New York Theater Ballet.

The musical choices range from ragtime and pop of the pre-World War I era to favorites by Robert Schu-

mann; the performance itself is set in 1915, a half-century after Lewis Carroll created his Victorian masterpiece. While the ballet is designed for children, its visual wit and dancing virtuosity will hold the attention of the truest ballet fan.

The performances will last roughly an hour with no intermission. Tickets are \$9 per person, with a group rate of \$7 for groups of 10 or more. For more information, or to order tickets, phone the box office weekdays, 9 a.m. to 3 p.m., at (978) 934-4444.

All Are Invited to Diversity and Pluralism Retreat

The Center for Diversity and Pluralism has extended an invitation to all faculty, staff and students to attend its May retreat. The event will be an opportunity to discuss ways of increasing diversity across the academic community and throughout the curriculum.

Anyone interested in attending, or anyone who wants to submit suggestions, should contact Anne Mulvey at ext. 4342, or by e-mail at Anne_Mulvey@uml.edu. The retreat will be held either Thursday, May 23, or Tuesday, May 28.



Admissions Hosts Lowell "Girls to College Day"

▲ More than 120 Lowell middle school girls participated in the annual "Girls to College Day" last month. Members of the Admissions Office staff gathered with keynote speaker, Shirley Alejandro, before the day's activities. From left, Jennifer Decker, assistant director; Dania Valdes, administrative assistant; Alejandro; Sandra Daigle, coordinator of guest relations; Kerri Mead, assistant director; and Karen Humphrey-Johnson, associate director. Other campus speakers included Kristen Rhyner, associate director of Career Services; Annie Ciaraldi, senior associate director of Residence Life; Asst. Prof. Nicole Champagne, Health and Clinical Sciences; Joan Lehoullier, senior associate director of Athletics; and Nimol San, admissions counselor. The Council of Diversity and Pluralism and the Council on Teaching, Learning and Research as Scholarship sponsored the day of workshops and panel discussions.

Student, Faculty Events Highlight Excellence in Research

Waldman Named Researcher of the Year

More than 125 students participated in the fifth annual Student Research Symposium, held on April 25 as part of the University's Excellence in Research Day. The students, about a third of them undergraduates, displayed more than 100 posters about their research projects and answered questions about them from faculty and other students.

A group of high school students from Tewksbury also visited the Symposium, which was sponsored by the Faculty-Student Collaborative Research Task Force of the Council on Teaching, Learning and Research as Scholarship.

A faculty reception that honored faculty for their research was held the afternoon of the same day, sponsored by the Research Foundation.

Following opening remarks by Chancellor William T. Hogan, the keynote speaker was Assoc. Prof. James Sherwood of Mechanical Engineering. Sherwood detailed some of his research findings on baseball bats and balls, research that is funded by Major League Baseball and the National Collegiate Athletic Association.

Dean Krishna Vedula of the Francis College of Engineering presented plaques to researchers who have received patents in the past year.

Dean Robert Tamarin of the Division of Sciences, College of Arts and Sciences, presented plaques to the nominees for the Researcher of the Year Award: Prof. Jerry Waldman, Physics; Prof. Thomas Shea, Biological Sciences; and Prof. Kanti Prasad, Electrical and Computer Engineering.

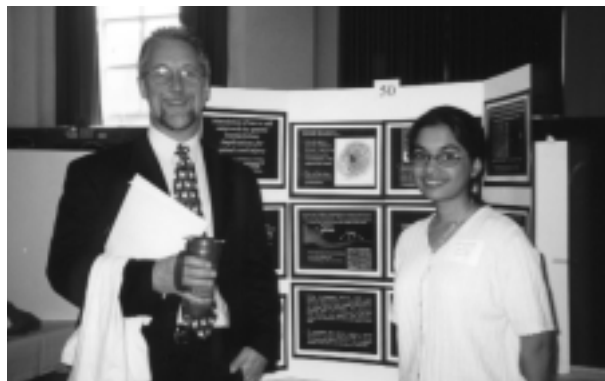
Prof. Jerry Waldman was named Researcher of the Year. He is director of the Submillimeter-Wave Technology Laboratory, the only modeling and research facility of its kind in the country, that creates simulation studies of sophisticated radar systems.



▲ Physics Prof. Jerry Waldman, second from right, director of the Submillimeter-Wave Technology Laboratory, was named Researcher of the Year and presented with an honorarium. With him are Biological Sciences Prof. Thomas Shea, left, a nominee for the honor; Louise Griffin, associate director of the Research Foundation, which sponsored the faculty event; and Dean Robert Tamarin, Division of Sciences, College of Arts and Sciences, who presented the award. Absent from the photo was nominee Prof. Kanti Prasad of Electrical and Computer Engineering.



▲ Physics Prof. Arthur Mittler, co-organizer of the Student Research Symposium with Psychology Asst. Prof. Doreen Arcus, learns about the research done by Gina Vitro, senior in Exercise Physiology. About 125 students participated.



▲ Biological Sciences Prof. Thomas Shea is particularly proud of the research done by honors sophomore Maya Dubey. Her work on a possible method for spinal cord regeneration is NSF-funded, has been approved for a patent submission and is being considered by the Christopher Reeve Paralysis Foundation.



▲ Electrical and Computer Engineering Prof. Charles Thompson talks seriously about graduate school plans with psychology seniors Carla Pereira, left, and Amy Brandolini. About a third of the student participants in the Research Symposium were undergraduates.

UMass Lowell Faculty Frequent Speakers at Museum of Science Forums

A presentation by Sandra Fessia Richardson of the Department of Health and Clinical

Sciences, "The Molecular Diagnostics of Lyme Disease," was a recent feature at the High School Science Symposium at Boston's Museum of Science.

This is the second of Richardson's presentations to be included in this series. It was arranged in part through the efforts of Health and Clinical Sciences Prof. Kay Doyle, who has been working with



▲ Sandra Fessia Richardson

the museum for the past 13 years to arrange guest speakers for high school students.

Other UMass Lowell science faculty who have served as museum speakers include Profs. Ted Namm, Julie Chen and Jim Sherwood, as well as Prof. Doyle herself.



◀ Emmanuel Ngijoi-Yogo, left, doctoral candidate in Physics, recently presented his research findings at a meeting of the American Physics Society, held in Albuquerque, N.M.; with him is his adviser, Physics Prof. Partha Chowdhury.



NSF's Prey Speaks

◀ Jane Prey, a program manager at the National Science Foundation's Division of Undergraduate Education, spoke on the Foundation's range of undergraduate program options to a gathering of students and faculty on April 11 in Olsen Hall.

Stecchi Receives Celebration of Today's Woman Award

Janice M. Stecchi, dean of the College of Health Professions, has been named recipient of the 2002 Celebration of Today's Woman Award given annually by Girls Incorporated of Greater Lowell (Girls Inc.). Girls Inc. helps girls six and older from Greater Lowell become strong, smart and bold through a range of after-school and summer cultural, recreational and educational programs.

The award recognizes "women who demonstrate exceptional leadership and commitment; who have a strong work ethic, moral character, and great compassion; and who work with dedication to enhance the quality of life and affect change in the greater Lowell community," according to Girls Inc. Executive Director Carol S. Duncan. Previous recipients of the award have included Nikki Tsongas, President of Middlesex Community College Carol Cowan, and former Lowell Mayor Eileen Donaghue.

Mary Johnson-Lally, president of Girls Inc., expressed her Board of

Directors' view that "Stecchi's extraordinary contributions as a healthcare provider, nurse, educator, board leader, and academic administrator position her as an excellent role model for women of all ages."

The award will be presented at a dinner on June 5 at the Courtyard Marriott in Lowell.

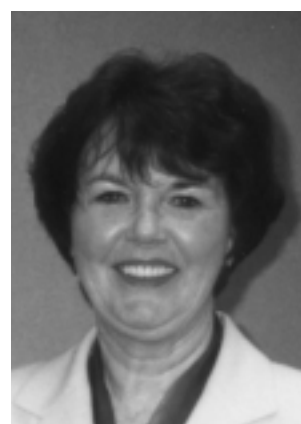
Stecchi received her bachelor's degree in nursing from Boston College, and her Ed.D. in Humanistic and Behavioral Studies from Boston University. She joined the faculty of Lowell State College, one of the campus's predecessor institutions, in 1971. She was named chairperson of the Nursing Dept. in 1987 and Dean of the College in 1994.

She has published widely on nursing curriculum and nursing staff development, preparation for nursing licensure exams, health care for the elderly, and recovery from breast cancer and mastectomy. One research interest, pursued with former Prof. Michael Fiddy, Electrical and Computer Engineering, Ann Benjamin, director of the Demonstration School,

and others, involves development of a computer-based translation device that could enhance classroom and health care interactions with non-English speaking students and patients.

Since its formation in the mid-1990s, Stecchi has been a member of the joint University-City of Lowell Arena and Civic Stadium Commission, which was charged with oversight for the construction and operation of the Paul E. Tsongas Arena and the Edward LeLacheur Park. Since 2000, she has been the campus representative to the Northeast 10 Athletic Conference Forum, which oversees athletic programs of 15 colleges in the region.

An active member of a number of professional organizations, Stecchi has served as Chair of the Cabinet for Nursing Education of the Massachusetts Nurses Association; long-time



▲ Janice M. Stecchi

program evaluator for the National League for Nursing; and a member of various committees at the American Cancer Society and Saints Memorial Hospital and its predecessor, St. John's Hospital. In January, she began a two-year term as the first woman president of the Board of Directors of Saints Memorial.

This spring, Stecchi was selected by the

Boston University School of Education Alumni Board to receive a Dean Arthur Herbert Wilde Society Award, which honors alumni for their service to the profession, the community or alma mater. In 1991, she received the Search for Excellence Award from the Massachusetts Nurses Association, and in 1992 a Certificate of Appreciation from the City of Lowell.

Cloning Pioneer First Speaker in Arts and Sciences Series

Dr. James Robl, a scientific leader in cloning technology who wanted to make large numbers of highly productive dairy cows, was the first speaker in a series sponsored by the College of Arts and Sciences Advisory Board.

Robl is the president, chief scientific officer and co-founder of Hematech of Westport, Conn., a company that is a pioneer in the development of human polyclonal antibody therapeutics.

During the 17 years that Robl was a professor at UMass Amherst, he developed patented animal cloning techniques and was involved in the start-up of several biotech companies, including Advanced Cell Technology, ACT, in Worcester. ACT has recently been in the news for the controversial announcement of the initial stages of human cloning.

Robl was always focused on the agricultural aspect of cloning. He says, "The only thing I wanted to do was take a good cow and make lots of copies of it."

One such effort was with Zita, a super cow. Not only was Zita the highest-ranked Holstein in the country in 1997, for volume of milk production, but 11 of the 46 current top cows are her direct descendants. Robl used a cell sample from Zita and successfully cloned two calves. Although still awaiting FDA approval



▲ Dr. James Robl, center, a scientific leader in cloning technology, was the first speaker in a series sponsored by the College of Arts and Sciences Advisory Board. With Robl are, from left, Dean Robert Tamarin, Division of Sciences, College of Arts and Sciences; Prof. Susan Braunhut, Biological Sciences Department; Dr. John Copeland, director of Clinical Physics, Beth Israel Deaconess Medical Center; and Carole Ward, biotechnology consultant. Copeland and Ward are members of the College's advisory board.

that products of cloned animals are acceptable for human consumption, Robl is bullish about the prospects of cloning's agricultural use.

Cows are involved in Hematech's work also—as producers of human antibodies. Using novel transfer technologies that replace a cow's antibody genes with a human's, researchers are producing polyclonal antibodies—antibodies that respond to multiple infectious agents.

The need is great. Patients with immune deficiency may spend up to \$5,000 per month for replacement

antibody infusions gathered from human donors. Also, since antibodies mutate constantly, diseases cannot develop resistance to antibodies as they do to antibiotics, so the new antibodies may be an important counter to the growing problem of antibiotic resistance.

Promotions Appointments

Appointments

Richard R. Reney, assistant director of Physical Plant, from supervisor of maintenance at Haverhill Public Schools.

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Note Worthy

Dr. Peter S. O'Connell, director of the Tsongas Industrial History Center, received the Outstanding Professional Award from the University of Connecticut's Neag School of Education Alumni Society at the group's annual awards dinner on April 27.

The award was bestowed in recognition of the innovative programs he helped develop and administer at the Tsongas Center and Old Sturbridge Village.

O'Connell has been instrumental in making the Tsongas Center a national model, where thousands of students participate in hands-on activities as they learn about the beginnings of America's industrial revolution. At Sturbridge, he worked on a team that developed an innovative learning center, inquiry tours, and primary sources that bring history alive for more than 100,000 students each year.

O'Connell earned his doctorate at the Neag School in 1990.

Prof. Arnold O'Brien, chair of the Environmental Earth and Atmospheric Sciences Department, and **Prof. Supriya Lahiri** of the Economics Department participated in the 28th annual conference of the Eastern Economic Association held in Boston in March.

The subject of their session was "An Economic Evaluation of a Wetland: A Contingent Valuation Approach."

Nursing **Prof. Karen Melillo**, whose most recent (2002) publication in the *Journal of Advanced Nursing*,

co-authored with Nursing **Prof. S.C. Houde**, was on the subject of "cardio-vascular health and physical activity in the older adult," co-authored four other articles published over the last two years.

The latest of these, devoted to the perceptions of older Latino adults regarding physical fitness and exercise, was published last year in the *Journal of Gerontological Nursing*. It was co-authored by Profs. **E. Williamson**, **S. Houde**, and **M. Futrell**, and by **C.Y. Read** and **M. Campasano**. Last year also saw the publication of an article documenting the scholarship of teaching, co-authored by Profs. **S.M. Reece**, **C.W. Pearce** and **M. Beaudry**, and published in the *Journal of Professional Nursing*.

Publications by Melillo in 2000 were in *The American Journal of Primary Health Care* and *The International Journal of NPAC*. Both were co-authored.

Satya Dewi Awarded Solomont Scholarship

Elizabeth "Nophie" Satya Dewi of the Regional Economic and Social Development Department has been awarded the Solomont Scholarship for Fall 2002. The scholarship was established by philanthropists Alan and Susan Solomont and is given each semester to a RESD student based on financial need as well as substantial academic achievement.

Nobel Laureate Speaks at Physics Colloquium

Harvard University Chemistry Professor and Nobel laureate **Dudley Herschbach** spoke at a recent physics colloquium, organized by Prof. **Albert Altman**. Herschbach was awarded the Nobel prize in chemistry for his experimental studies of molecular forces. At the colloquium, he spoke about slowing molecules down to extremely low speeds, in effect the same as super cooling them, which makes molecules much easier to probe and measure.



▲ Harvard University Chemistry Professor and Nobel laureate **Dudley Herschbach**, left, gathers before the physics colloquium with Physics Prof. **Albert Altman**, adjunct faculty member in physics **Herb Fox**, and Dean **Robert Tamarin** of the Division of Sciences, College of Arts and Sciences.

"This is the third time Dr. Herschbach has spoken at the physics colloquium," said Altman. "He is a superb scientist, and a fantastic lecturer and educator."



Diversity Panel Enlarges the Conversation

◀ **Prof. Khanh Dinh**, of psychology, speaks at a Dinner Conversation which addressed "Diversity and Learning: Enlarging the Conversation." Dinh joined by Profs. **Todd Avery**, English; **Carol McDonough**, economics; and **Lee Vorderer**, psychology, on the panel. The dinner was sponsored by the Council on Diversity and Pluralism.



Langdon Closes Senior Executive Forum

▲ **Kristine Stotz Langdon**, center, with Dean **Kathryn Verreault**, Management, and Dean **Krishna Vedula**, Engineering, at the final Senior Executive Forum for the year. Langdon is a **Spencer Stuart's Consultant**, and once worked as a **White House Fellow** at the **National Security Council**. She presented her top ten list of career management tips.

The Forum is co-sponsored by the Colleges of Engineering and Management.



Student Art Showcase Is a "Big Show"

▲ Art Department Chair **Jim Coates**, left, joins art students **Melissa Boyajian** and **Jason Blodgett**, both recipients of honors in the annual "Big Show," which showcases student art.

Calendar of Events

Thursday, May 9

Performance, STARTS Educational Field Trip Series, "Around the World and Back Again with Tom Chapin and Friends," grades 1-4, 9:30 and 11:30 a.m., Durgin Hall, South Campus.

Luncheon, for faculty and staff, honoring 2002 retirees, noon, Costello Gymnasium.

Concert, UMass Lowell Performance Seminar, 7:30 p.m., Fisher Recital Hall. For information, call the Music Dept., ext. 3850.

Friday, May 10

Performance, STARTS Educational Field Trip Series, "Around the World and Back Again with Tom Chapin and Friends," grades 1-4, 9:30 and 11:30 a.m., Durgin Hall, South Campus.

Saturday, May 11

Concert, UMass Lowell All-City Youth Wind Ensemble, 7:30 p.m., Durgin Concert Hall. For information, call the Music Dept. at ext. 3850.

Sunday, May 12

Concert, UMass Lowell Strings Projects, and String Currents, 3 p.m., Fisher Recital Hall. For information, call the Music Dept., ext. 3850.

Monday, May 13

Concert, Prof. Mark Cantrell, trombone, 7:30 p.m., Fisher Recital Hall. For information, call the Music Dept., ext. 3850.

Concert, Jason Bielik, clarinet, 7:30 p.m., Fisher Recital Hall. For information, call the Music Dept., ext. 3850.

Wednesday, May 15

Training, 8-hour hazardous waste site worker refresher, 8 a.m. to 5 p.m., Wannalancit Mill. For more information or to register, call ext. 3257. Sponsored by the New England Consortium.

Discussion, faculty/staff discussion of the new Media Studies minor, 11 a.m., O'Leary 329. For information, call Susan Gallagher in Political Science, ext. 4253.

Monday, May 20

Training, 40-hour hazardous waste site worker training, 8 a.m. to 5 p.m., Wannalancit Mill. Continues through May 24. For more information or to register, call ext. 3257. Sponsored by the New England Consortium.

Thursday, May 23

Tournament, UMass Lowell Golf Tournament, Sky Meadow Country Club, Nashua, N.H. For information, call MJ Mastrovich, ext. 2302.

Wednesday, May 29

Training, 8-hour emergency responder refresher, 8 a.m. to 5 p.m., Wannalancit Mill. For more information or to register, call ext. 3257. Sponsored by the New England Consortium.

Saturday, June 2

Commencement, UMass Lowell Commencement, 10 a.m., Tsongas Arena.

Sunday, June 3

Training, 40-hour hazardous waste site worker training, 8 a.m. to 5 p.m., Wannalancit Mill. Continues through June 7. For more information or to register, call ext. 3257. Sponsored by the New England Consortium.

Tuesday, June 5

Conference, Massachusetts Education Computing Conference, continuing through June 7 at Cape Cod Community College. The Faculty Development/Teaching with Technology Task Force of the Center for Teaching Learning and Research as Scholarship will pay the registration fee for 25 UMass Lowell faculty and staff. For information, go to the MECC Web site: www.cite.mass.edu/mecc. To register through the Task Force, call Pamela Kenyon, ext. 2936.

Tuesday, June 12

Training, 8-hour hazardous waste site worker training, 8 a.m. to 5 p.m., Wannalancit Mill. For more information or to register, call ext. 3257. Sponsored by the New England Consortium.

Tuesday, June 19

Training, 8-hour emergency responder, 8 a.m. to 5 p.m., Wannalancit Mill. For more information or to register, call ext. 3257. Sponsored by the New England Consortium.

Forrant Study Looks at Impact of Manufacturing in Connecticut



◀ Prof. Robert Forrant, of Regional Economic and Social Development, pictured, recently discussed organizing Pratt & Whitney and United Technology's unions to keep manufacturing jobs in Conn. He was commissioned to study the potential economic impact on the Hartford area of losing 6,100 manufacturing jobs. The study was used to influence the Conn. legislature. The talk was sponsored by the Department for Regional Economic and Social Development.

Alumnus-Led Workshop Delves into Biotech

Carole Ward, alumnus in chemistry from Lowell Tech and a member of the College of Arts and Sciences Advisory Board, led a workshop for forty biology students recently about the biotechnology industry.

Ward has extensive experience in academic and industry settings, having worked at Harvard, MIT, and UC at Berkeley and San Francisco on intermediary metabolism, transfer RNA, protein chemistry, genetics and molecular biology. She then worked for Syntex Corp on small molecule development. She joined Genentech in 1980 and stayed there for more than 15 years, during their growth from a start-up to a full-fledged biotech company. She retired as a project manager and has continued consulting in drug development.

Did you know...

That the windows being replaced in Coburn Hall weigh a whopping 800 pounds each?

For Extra Credit...

How long have the windows been in place?

The mammoth windows in Coburn Hall are over a century old and are being replaced for the first time since the hall was built in 1897.



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